

SECTION 07190
WATER REPELLENTS

PART 1 - GENERAL

0.1 DESCRIPTION OF WORK

- A.** Work Included: This Section specifies water-repellent coatings for the following surfaces:
1. Concrete vertical surfaces.
 2. Concrete horizontal surfaces.
 3. Cast stone.
 4. Brick masonry.
 5. Concrete unit masonry (unpainted and unglazed).
 6. Portland cement plaster.
 7. Stonework.
- B.** Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 07920 - JOINT SEALANTS; Joint sealers.
 2. Section 03300 - Cast-In-Place Concrete

0.2 PERFORMANCE REQUIREMENTS

- A.** Performance Testing: Provide water repellents that comply with test-performance requirements indicated, as evidenced by reports of tests performed by manufacturer by a qualified independent testing agency on manufacturer's standard products applied to substrates simulating those on Project using same application methods to be used for Project.
- B.** Absorption: Minimum 90 percent reduction of absorption after 24 hours in comparison of treated and untreated specimens.
1. Brick: ASTM C 67.
 2. Stone: ASTM C 97.
 3. Concrete Unit Masonry: ASTM C 140.
 4. Hardened Concrete: ASTM C 642.
- C.** Permeability: Minimum 80 percent water-vapor transmission in comparison of treated and untreated specimens, per ASTM D 1653.
- D.** Water Penetration and Leakage through Masonry: Minimum 90 percent reduction in leakage rate in comparison of treated and untreated specimens, per ASTM E 514.

- E. Durability: Maximum 5 percent loss of water repellency after 2500 hours of weathering in comparison to specimens before weathering, per ASTM G 154.

0.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Include manufacturer's printed statement of VOC content.
 - 2. Include manufacturer's standard colors.
- B. Samples: For each type and color of water repellent and substrate indicated, 12 by 12 inches in size, with specified water-repellent treatment applied to half of each Sample.
- C. Manufacturer Certificates: Signed by manufacturers certifying that water repellents comply with requirements.
- D. Qualifications: Installer.
- E. Warranty: Special warranty specified in this Section.

0.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Test Application: Apply a finish sample for each type of water repellent and substrate required. Duplicate finish of approved sample.
 - 1. Locate each test application as directed by Engineer.
 - 2. Size: 10 square feet.
 - 3. Final approval by Engineer of color and water-repellent application will be from test applications.

0.5 PROJECT CONDITIONS

- A. Limitations: Proceed with application only when the following existing and forecasted weather and substrate conditions permit water repellents to be applied according to manufacturers' written instructions and warranty requirements:
 - 1. Ambient temperature is above 40 deg F.
 - 2. Concrete surfaces and mortar have cured for more than 28 days.
 - 3. Concrete or brick masonry walls are not treated prior to 30 days after building close-in.
 - 4. Rain or snow is not predicted within 24 hours.

5. Application proceeds more than 24 hours after surfaces have been wet.
6. Substrate is not frozen, or surface temperature is above 40 deg F.
7. Windy conditions do not exist that may cause water repellent to be blown onto vegetation or surfaces not intended to be treated.

0.6 WARRANTY

- A.** Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace materials that fail to maintain water repellency specified in Part 1 "Performance Requirements" Article within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

0.1 PENETRATING WATER REPELLENTS

- A.** Silane/Siloxane-Blend, Penetrating Water Repellent: Clear, silane and siloxane blends with 3.3 lb/gal. or less of VOCs.
1. Available Products:
 - a. Anti-Hydro International, Inc.; Aridox 40 VOC.
 - b. Hydrozo, a division of ChemRex; Enviroseal 7 or Hydrozo 100.
 - c. Pecora Corporation; 910W.
 - d. ProSoCo, Inc.; SL 100 Water Repeller.

PART 3 - EXECUTION

0.1 PREPARATION

- A.** Clean substrate of substances that might interfere with penetration or performance of water repellents. Test for moisture content, according to water-repellent manufacturer's written instructions, to ensure that surface is dry enough.
1. Cast-in-Place Concrete Section 03300: Remove oil, curing compounds, laitance, and other substances that could prevent adhesion or penetration of water repellents.
 2. Clay Brick Masonry: Clean clay brick masonry per ASTM D 5703.
- B.** Test for pH level, according to water-repellent manufacturer's written instructions, to ensure chemical bond to silicate minerals.

- C. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces. Cover live plants and grass.
- D. Coordination with Sealants: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.
 - 1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those used in the work.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

0.2 APPLICATION

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect the substrate before application of water repellent and to instruct Applicator on the product and application method to be used.
- B. Apply a heavy-saturation spray coating of water repellent on surfaces indicated for treatment using low-pressure spray equipment to achieve application rate recommended by manufacturer. Prepare a test area to determine proper application rate as recommended by manufacturer. Comply with manufacturer's written instructions for using airless spraying procedure, unless otherwise indicated. Thoroughly mix prior to application.
 - 1. Precast Concrete: At Contractor's option, first application of water repellent on precast concrete units may be completed before installing units. Mask sealant-bond surfaces to prevent water repellent from migrating onto joint surfaces.

0.3 CLEANING

- A. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Repair damage caused by water-repellent application. Comply with manufacturer's written cleaning instructions.

PART 4 - MEASUREMENT AND PAYMENT

0.1 MEASUREMENT

- A.** Water repellents will be measured as per square foot complete in place, including all preparation, accessories and incidentals.

0.2 PAYMENT

- A.** Payment for water repellents will be made at the Contract unit price for the quantities as specified above.

0.3 PAYMENT ITEMS

ITEM NO.	DESCRIPTION	UNIT
0710.701	WATER REPELLENT COATINGS	SF

END OF SECTION

NOTES TO THE DESIGNER

- A.** Any request to modify or waive the specification requirements listed below must be approved in writing by the MBTA's Director of Design:

1. None